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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/785,675	02/24/2004	Kevin M. Graham	10813-02	8395

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EXAMINER

GOINS, DAVETTA WOODS

ART UNIT PAPER NUMBER

2632

DATE MAILED: 07/01/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/785,675

Applicant(s)

GRAHAM, KEVIN M.

Examiner

Davetta W. Goins

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-6 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-6 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. ____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|--|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>7/24/04</u> . | 6) <input type="checkbox"/> Other: ____ |

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Pace (US Pat. 5,954,299) in view of Wilson (US Pat. 5,902,341).

In reference to claims 1, 6, Pace discloses a) the claimed transmitter and receiver system at a highway/railroad crossing site which detects the movement if a train is approaching the crossing, which is met by remote sensor probes 50 along the track for detecting the presence of a train 52 as the train is approaching the crossing (col. 4, lines 1-67), b) the claimed presence detection system at the crossing site which detects a train at the crossing, which is met by infrared transmitter 64 and receiver 66, located at the crossing 56 (col. 6, lines 20-47; col. 9, lines 31-40), and c) the claimed warning signal devices at the crossing activated by the presence detection system for providing a warning to a motorist approaching the crossing, which is met by warning signal devices 12 located at the crossing 56 that are activated upon the system 10 detecting the approaching train 52 by sensor probes 50 as well as by transmitter 64 and receiver 66 (col. 5, lines 19-53; col. 6, lines 20-47). Pace does not disclose the claimed Doppler radar transmitter. Wilson discloses a train system including the motion of the train cars being detected by Doppler shifts in received frequencies upon the motion of the train. A Doppler receiver 56 is connected to

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an antenna to interrogate and receive information pertaining to the location of the train (col. 3, lines 57-67; col. 4, lines 44-67). Since both Pace and Wilson disclose systems that are concerned with determining the location of a train while traveling on the tracks, it would have been obvious to one of ordinary skill in the art at the time of the invention to incorporate the teaching of using Doppler receiver and transmitter, as disclosed by Wilson, with the system of Pace, to ensure that the movement of the train will be detected and not provide a false indication of an oncoming train prior to activating an alarm indication.

In reference to claim 2, Pace discloses the claimed solar electrical generation array, which is met by solar panels 40 with rechargeable batteries (col. 4, lines 48-60).

In reference to claim 3, Pace discloses the claimed presence detection system operating within a limited area close by the crossing, which is met by the series of remote sensors 50 located near the crossing 56 to detect the train as it approaches the crossing 56 (Figure 2).

In reference to claim 4, Pace disclose a) the claimed transmitter and receiver system at a highway/railroad crossing site which detects the movement if a train is approaching the crossing, which is met by remote sensor probes 50 along the track for detecting the presence of a train 52 as the train is approaching the crossing (col. 4, lines 1-67), b) the claimed presence detection system at the crossing site which detects a train at the crossing, which is met by infrared transmitter 64 and receiver 66, located at the crossing 56 (col. 6, lines 20-47; col. 9, lines 31-40), c) the claimed warning signal devices at the crossing activated by the presence detection system

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for providing a warning to a motorist approaching the crossing, which is met by warning signal devices 12 located at the crossing 56 that are activated upon the system 10 detecting the approaching train 52 by sensor probes 50 as well as by transmitter 64 and receiver 66 (col. 5, lines 19-53; col. 6, lines 20-47), and d) the claimed solar panel arrays and storage batteries, which is met by solar panels 40 with rechargeable batteries (col. 4, lines 48-60). Pace does not disclose the claimed Doppler radar transmitter. Wilson discloses a train system including the motion of the train cars being detected by Doppler shifts in received frequencies upon the motion of the train. A Doppler receiver 56 is connected to an antenna to interrogate and receive information pertaining to the location of the train (col. 3, lines 57-67; col. 4, lines 44-67). Since both Pace and Wilson disclose systems that are concerned with determining the location of a train while traveling on the tracks, it would have been obvious to one of ordinary skill in the art at the time of the invention to incorporate the teaching of using Doppler receiver and transmitter, as disclosed by Wilson, with the system of Pace, to ensure that the movement of the train will be detected and not provide a false indication of an oncoming train prior to activating an alarm indication.

In reference to claim 5, Pace discloses a) the claimed two sets of first and second transmitter receiver units positioned adjacent a railroad track and located an extended distance from the crossing, which is met by remote sensor probes 50 along the track for detecting the presence of a train 52 as the train is approaching the crossing (col. 4, lines 1-67), b) the claimed presence detection system at the crossing site which detects a train at the crossing, which is met by infrared transmitter 64 and receiver 66, located at the crossing 56 (col. 6, lines 20-47; col. 9, lines

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31-40), c) the claimed warning signal devices at the crossing activated by the presence detection system for providing a warning to a motorist approaching the crossing, which is met by warning signal devices 12 located at the crossing 56 that are activated upon the system 10 detecting the approaching train 52 by sensor probes 50 as well as by transmitter 64 and receiver 66 (col. 5, lines 19-53; col. 6, lines 20-47), and d) the claimed solar panel arrays and storage batteries, which is met by solar panels 40 with rechargeable batteries (col. 4, lines 48-60). Pace does not disclose the claimed Doppler radar transmitter nor the claimed wireless communication devices transmitting and receiving signals between the radar warning system and presence detection system. Wilson discloses a train system including the motion of the train cars being detected by Doppler shifts in received frequencies upon the motion of the train. A Doppler receiver 56 is connected to an antenna to interrogate and receive information pertaining to the location of the train. A control signal is output from carrier locked loop 90 to processor 60 as an indication of the Doppler frequency shift characterizing the RF signal received at front end 82. After down conversion in front end 82, the Doppler frequency shift characterizing the RF signal is added to (or subtracted from) the carrier frequency of the baseband signal (col. 3, lines 57-67; col. 4, lines 44-67). Since both Pace and Wilson disclose systems that are concerned with determining the location of a train while traveling on the tracks, it would have been obvious to one of ordinary skill in the art at the time of the invention to incorporate the teaching of using Doppler receiver and transmitter with wireless communication, as disclosed by Wilson, with the system of Pace, to ensure that the movement of the train will be detected and not provide a false indication of an oncoming train prior to activating an alarm indication.

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3. The prior art of record and not relied upon is considered pertinent to the applicant's disclosure as follows. Hobson et al. (US Pat. 5,825,412), Roop et al. (US Pat. 6,179,252 B1), and Anderson et al. (US Pat. 6,457,682 B2), which disclose railroad crossing monitoring systems.

4. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Davetta W. Goins whose telephone number is 571-272-2957.

The examiner can normally be reached on Mon-Fri with every other Fri. off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Daniel Wu can be reached on 571-272-2964. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Davetta W. Goins
Primary Examiner
Art Unit 2632



D.W.G.
June 27, 2005